

6-2: Absolute Value, Square Roots, and Quadratic Equations

Warm-up:

1. Identify the values that satisfy the following conditions.

a. 5 units from 0

b. 3 units from 1

c. 6 units from 6

2. Simplify $-\sqrt{36}$

3. Solve $x^2 = 49$

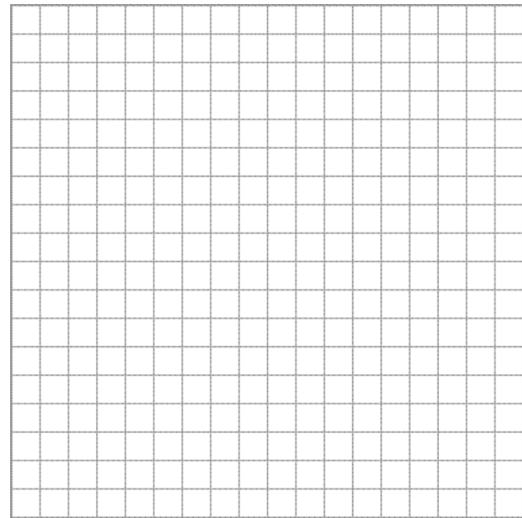
$$|-3| =$$

$$|3| =$$

In this case, this tells us the distance from zero in both cases is _____.

Example 1: $|x - 12| = 4$ means the "Distance between x and 12 is 4"

Explore: Graph $f(x) = |x|$. (This is an absolute value function. What notation is it?)



What is the shape of this graph?

****HINT****

Explore: Find $\sqrt{5^2}$, $\sqrt{(-3)^2}$, and $\sqrt{2.6^2}$.

Absolute Value-Square Root Theorem:

Example 2: Solve $x^2 = 75$.

Ancient Greek Question: What is the radius of a circle if it has the same area as a square?

Example 3: A square and a circle have the same area. The square has a side with length 8 units. What is the radius of the circle?

Another Ancient Greek Question: Can square roots be written as fractions?

Example 4: Write $\sqrt{75}$ as a fraction.

Irrational Number:

Homework:

"Keep steadily before you the fact that all true success depends at last upon yourself." - Theodore T. Hunger